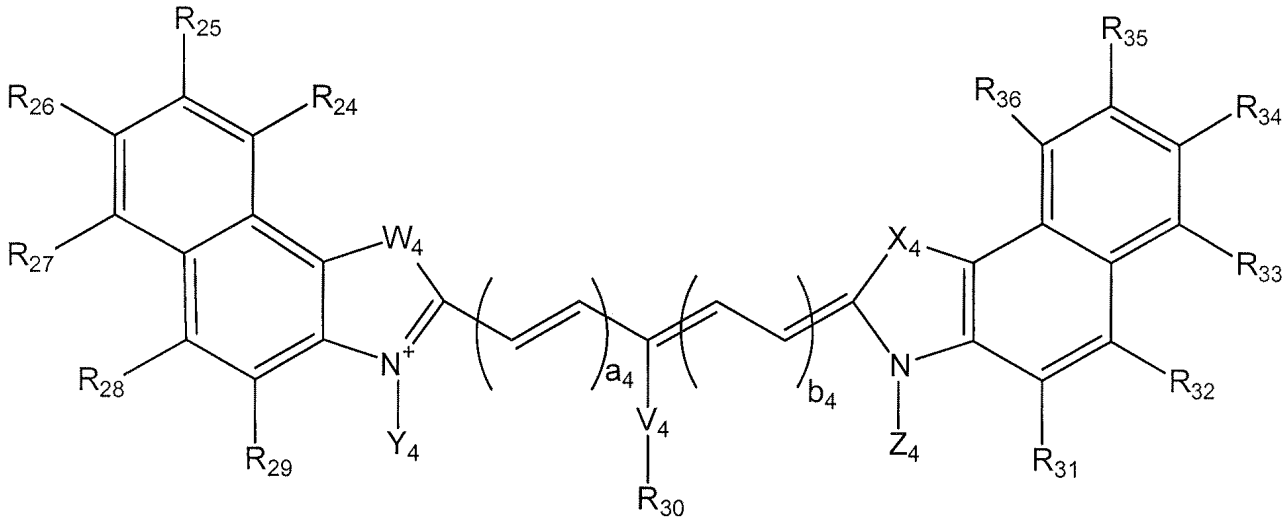
This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

1-3. (CANCELED)

4. (CURENTLY AMENDED) A pharmaceutical composition comprising an effective amount of the compound of formula 4



Formula 4

for a diagnostic or therapeutic procedure and a pharmaceutically acceptable carrier for administration to a mammal wherein at least one of W_4 and X_4 is S and the other is selected from the group consisting of $-CR_cR_d$, $-NR_c$, -O-, and

-S-; R_{24}, R_{25}, R_{26}, R_{27}, R_{28}, R_{29}, R_{30}, R_{31}, R_{32}, R_{33}, R_{34}, R_{35} and R_{36}, Y_4, and Z_4 are independently selected from the group consisting of C1-C10 alkoxyl, C1-C10 polyalkoxyalkyl, C1-C20 polyhydroxyalkyl, C5-C20 polyhydroxyaryl, glucose ~~derivatives of R groups~~, saccharides, amino, C1-C10 aminoalkyl, cyano, nitro, halogen, hydrophilic peptides, arylpolysulfonates, C1-C10 alkyl, C5-C20 aryl, $-SO_3T$, $-CO_2T$, -OH, $-(CH_2)_aSO_3T$, $-(CH_2)_aOSO_3T$,

$-(CH_2)_aNHSO_3T$, $-(CH_2)_aCO_2(CH_2)_bSO_3T$, $-(CH_2)_aOCO(CH_2)_bSO_3T$,

$-(CH_2)_aCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCO(CH_2)_bSO_3T$,

$-(CH_2)_aNHCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCSNH(CH_2)_bSO_3T$,

$-(CH_2)_aOCONH(CH_2)_bSO_3T$, $-(CH_2)_aPO_3HT$, $-(CH_2)_aPO_3T_2$, $-(CH_2)_aOPO_3HT$,

$-(CH_2)_aOPO_3T_2$, $-(CH_2)_aNHPO_3HT$, $-(CH_2)_aNHPO_3T_2$, $-(CH_2)_aCO_2(CH_2)_bPO_3HT$, $-(CH_2)_aCO_2(CH_2)_bPO_3T_2$, $-(CH_2)_aOCO(CH_2)_bPO_3HT$, $-(CH_2)_aOCO(CH_2)_bPO_3T_2$, $-(CH_2)_aCONH(CH_2)_bPO_3HT$, $-(CH_2)_aCONH(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCO(CH_2)_bPO_3HT$, $-(CH_2)_aNHCO(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCONH(CH_2)_bPO_3HT$, $-CH_2)_aNHCONH(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCSNH(CH_2)_bPO_3HT$, $-(CH_2)_aNHCSNH(CH_2)_bPO_3T_2$, $-(CH_2)_aOCONH(CH_2)_bPO_3HT$, and $-(CH_2)_aOCONH(CH_2)_bPO_3T_2$, $-CH_2(CH_2$-O $-CH_2)_c-CH_2-OH$, $-(CH_2)_d-CO_2T$, $-CH_2-(CH_2-O-CH_2)_e-CH_2-CO_2T$, $-(CH_2)_f-NH_2$, $-CH_2-(CH_2-O-CH_2)_g-CH_2-NH_2$, $-(CH_2)_h-N(R_a)-(CH_2)_i-CO_2T$, and $-(CH_2)_j-N(R_b)$ $-CH_2-(CH_2-O-CH_2)_k-CH_2-CO_2T$; V_4 is a single bond or is selected from the group consisting of -O-, -S-, -Se-, and $-NR_a$; a_4 and b_4 vary from 0 to 5; a, b, d, f, h, i, and j independently vary from 1-10; c, e, g, and k independently vary from 1-100; R_a, R_b, R_c, and R_d are defined in the same manner as Y_4; and T is either H or a negative charge.

5. (CURRENTLY AMENDED) The composition as in claims ~~1, 2, 3, or~~ 4 further comprising a contrast agent.

6. (CURRENTLY AMENDED) The composition as in claims ~~1, 2, 3, or~~ 4 wherein the compound comprises a radioactive halogen.

7. (CURRENTED AMENDED) The composition as in claims ~~1, 2, 3, or~~ 4 wherein at least one R group of the compound is replaced by a polyamino carboxylic acid ~~or its derivative~~.

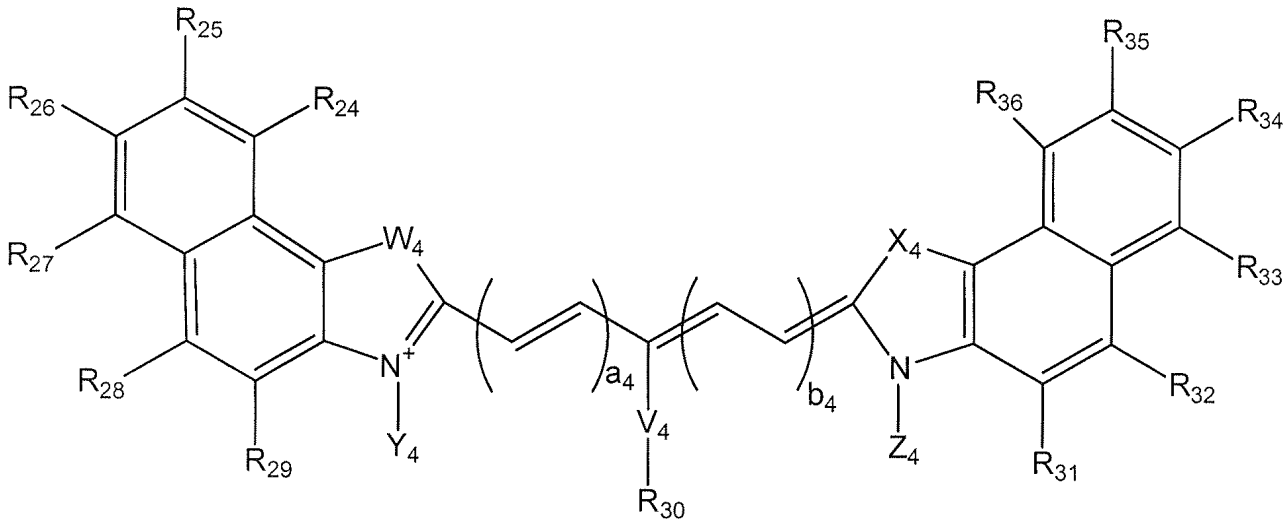
8. (ORIGINAL) The composition of claim 7 further comprising a radioactive metal ion or a paramagnetic metal ion.

9. (CURRENTED AMENDED) The composition as in claims ~~1, 2, 3,~~ 4, 6, or 7 formulated as at least oneof a liposome, a micell, a microcapsule, or a microparticle.

10. (CURRENTED AMENDED) The composition as in claims ~~1, 2, 3,~~ 4, 6, or 7 formulated as at least one of ultra small iron oxide particles, silver particles, or gold particles.

11-13. (CANCELED)

14. (CURRENTLED AMENDED) A method for performing a diagnostic or therapeutic procedure comprising administering to a mammal an effective amount of the compound of formula 4



Formula 4

wherein at least one of W_4 and X_4 is S and the other is selected from the group consisting of $-CR_cR_d$, $-NR_c$, -O-, and -S-; R_{24}, R_{25}, R_{26}, R_{27}, R_{28}, R_{29}, R_{30}, R_{31}, R_{32}, R_{33}, R_{34}, R_{35} and R_{36}, Y_4, and Z_4 are independently selected from the group consisting of C1-C10 alkoxyl, C1-C10 polyalkoxyalkyl, C1-C20 polyhydroxyalkyl, C5-C20 polyhydroxyaryl, glucose ~~derivatives of R groups~~, saccharides, amino, C1-C10 aminoalkyl, cyano, nitro, halogen, hydrophilic peptides, arylpolysulfonates, C1-C10 alkyl, C5-C20 aryl, $-SO_3T$, $-CO_2T$, -OH, $-(CH_2)_aSO_3T$, $-(CH_2)_aOSO_3T$, $-(CH_2)_aNHSO_3T$, $-(CH_2)_aCO_2(CH_2)_bSO_3T$, $-(CH_2)_aOCO(CH_2)_bSO_3T$, $-(CH_2)_aCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCO(CH_2)_bSO_3T$, $-(CH_2)_aNHCONH(CH_2)_bSO_3T$, $-(CH_2)_aNHCSNH(CH_2)_bSO_3T$, $-(CH_2)_aOCONH(CH_2)_bSO_3T$, $-(CH_2)_aPO_3HT$, $-(CH_2)_aPO_3T_2$, $-(CH_2)_aOPO_3HT$,

$-(CH_2)_aOPO_3T_2$, $-(CH_2)_aNHPO_3HT$, $-(CH_2)_aNHPO_3T_2$, $-(CH_2)_aCO_2(CH_2)_bPO_3HT$, $-(CH_2)_aCO_2(CH_2)_bPO_3T_2$, $-(CH_2)_aOCO(CH_2)_bPO_3HT$, $-(CH_2)_aOCO(CH_2)_bPO_3T_2$, $-(CH_2)_aCONH(CH_2)_bPO_3HT$, $-(CH_2)_aCONH(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCO(CH_2)_bPO_3HT$, $-(CH_2)_aNHCO(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCONH(CH_2)_bPO_3HT$, $-(CH_2)_aNHCONH(CH_2)_bPO_3T_2$, $-(CH_2)_aNHCSNH(CH_2)_bPO_3HT$, $-(CH_2)_aNHCSNH(CH_2)_bPO_3T_2$, $-(CH_2)_aOCONH(CH_2)_bPO_3HT$, and $-(CH_2)_aOCONH(CH_2)_bPO_3T_2$, $-CH_2(CH_2\text{-}O\text{-}CH_2)_c\text{-}CH_2\text{-}OH$, $-(CH_2)_d\text{-}CO_2T$, $-CH_2\text{-}(CH_2\text{-}O\text{-}CH_2)_e\text{-}CH_2\text{-}CO_2T$, $-(CH_2)_f\text{-}NH_2$, $-CH_2\text{-}(CH_2\text{-}O\text{-}CH_2)_g\text{-}CH_2\text{-}NH_2$, $-(CH_2)_h\text{-}N(R_a)\text{-}(CH_2)_i\text{-}CO_2T$, and $-(CH_2)_j\text{-}N(R_b)$ $-CH_2\text{-}(CH_2\text{-}O\text{-}CH_2)_k\text{-}CH_2\text{-}CO_2T$; V_4 is a single bond or is selected from the group consisting of -O-, -S-, -Se-, and $-NR_a$; a_4 and b_4 vary from 0 to 5; a, b, d, f, h, i, and j independently vary from 1-10; c, e, g, and k independently vary from 1-100; R_a, R_b, R_c, and R_d are defined in the same manner as Y_4; and T is either H or a negative charge, and thereafter performing the diagnostic or therapeutic procedure.

15. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13, or~~ 14 wherein said procedure utilizes light of wavelength in the region of 350-1300nm.

16. (ORIGINAL) The method of claim 15 wherein said procedure comprises monitoring a blood clearance profile by fluorescence using light of wavelength in the region of 350 nm to 1300 nm.

17. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13, or~~ 14 wherein said procedure comprises monitoring a blood clearance profile by absorption using light of wavelength in the region of 350 nm to
1300 nm.

18. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13, or~~ 14 wherein the compound contains a radioactive halogen and imaging the mammal by at least one of optical imaging and nuclear imaging.

19. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13, or~~ 14 where the compound administered has at least one R group replaced by a polyamino carboxylic acid or its derivative.

20. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13, or~~ 14 wherein the compound administered further comprises a radioactive metal ion or a paramagnetic metal ion.

21. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13, 14,~~ 19, or 20 further comprising imaging by at least one of optical imaging, nuclear imaging, or magnetic resonance imaging.

22. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13,~~ 14, or 19 wherein the compound is administered in a formulation selected from at least one of liposomes, micelles, microcapsules, or microparticles.

23. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13,~~ 14, 18, 19, or 20 wherein the compound is administered in a formulation selected from at least one of ultra small iron oxide particles, silver particles, or gold particles.

24. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13,~~ 14, 18, 19, 20, 21, 22, or 23 further comprising administering a non-optical contrast agent and imaging by at least one of magnetic resonance, ultrasound, x-ray, positron emission tomography, computed tomography, optoacoustic imaging, and single photon emission computed tomography.

25. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13,~~ 14, 18, 19, 20, 21, 22, or 23 wherein said procedure is for physiological function monitoring.

26. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13,~~ 14, 18, 19, 20, 21, 22, or 23 wherein said procedure is for at least one of renal function monitoring, cardiac function monitoring, and kidney function monitoring.

27. The method as in claims ~~11, 12, 13,~~ 14, 18, 19, 20, 21, 22, or 23 wherein said procedure is for determining organ perfusion *in vivo.*

28. (CURRENTLY AMENDED) The method as in claims ~~11, 12, 13,~~ 14, 18, 19, 20, 21, 22, or 23 further comprising optically imaging the mammal.

29. (CURRENTLY AMENDED) The method of imaging a patient comprising administering a non-optical contrast agent composition further comprising the compound as in claims ~~1, 2, 3,~~ 4, 7, or 8 and performing at least one of an optical imaging procedure or a non-optical imaging procedure.

30. (ORIGINAL) The method of claim 29 wherein the non-optical contrast agent composition is chosen from a magnetic resonance composition, a computed tomography composition, an x-ray composition, a nuclear imaging composition, a positron emission tomography composition, a single photon emission computed tomography composition, an optoacoustic imaging composition and an ultrasound composition.

31. (ORIGINAL) The method of claim 29 wherein the compound stabilizes or buffers the non-optical contrast agent composition.